7J7

RCA

7J7
TRIODE-HEPTODE CONVERTER

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage	6.3[□]	ac or dc volts
Current	0.3[□□]	amp

Direct Interelectrode Capacitances:[○] ←

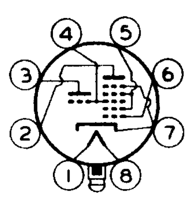
Heptode Grid No.1 to Heptode Plate	0.03 max.	µµf
Heptode Grid No.1 to Triode Plate	0.1 max.	µµf
Heptode Grid No.1 to Triode Grid & Heptode Grid No.3	0.3 max.	µµf
Triode Grid & Heptode Grid No.3 to Triode Plate	0.9	µµf
Heptode Grid No.1 to All Other Electrodes (RF Input)	4.6	µµf
Heptode Plate to All Other Electrodes (Mixer Output)	3.2	µµf
Triode Grid & Heptode Grid No.3 to All Other Electrodes Except Triode Plate (Oscillator Input)	7.5	µµf
Triode Plate to All Other Electrodes Except Triode Grid & Heptode Grid No.3 (Oscillator Output)	7.5	µµf

[○] With external shield connected to cathode.

Mechanical:

Mounting Position	Any
Maximum Overall Length	2-25/32"
Maximum Seated Length	2-1/4"
Maximum Diameter	1-3/16"
Bulb	T-9
Base	Lock-in 8-Pin
Basing Designation for BOTTOM VIEW	8BL

Pin 1 - Heater
Pin 2 - Heptode Plate
Pin 3 - Triode Plate
Pin 4 - Triode Grid, Heptode Grid No.3
Pin 5 - Heptode Grids No.2 & No.4



Pin 6 - Heptode Grid No.1
Pin 7 - Cathode, Heptode Grid No.5, Internal Shield
Pin 8 - Heater
Plug - Base Shell

CONVERTER

Maximum Ratings, ***Design-Center Values*****:**

HEPTODE PLATE VOLTAGE	300 max.	volts
HEPTODE GRIDS-No.2 & No.4 (SCREEN) VOLTAGE	100 max.	volts

[□] Nominal voltage = 7.0 volts.
[□□] Nominal current = 0.32 ampere.
← Indicates a change.

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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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HEPTODE GRIDS-No.2 & No.4 SUPPLY VOLTAGE	300 max.	volts
HEPTODE GRID-No.1 (CONTROL-GRID) VOLTAGE:		
Positive bias value	0 max.	volts
HEPTODE PLATE DISSIPATION	0.5 max.	watt
HEPTODE GRIDS-No.2 & No.4 DISSIPATION	0.3 max.	watt
TRIODE PLATE VOLTAGE	150 max.	volts
TRIODE PLATE-SUPPLY VOLTAGE	300 max.	volts
TRIODE PLATE DISSIPATION	1.25 max.	watts
TOTAL CATHODE CURRENT	14 max.	ma
→ PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	90 max.	volts
Heater positive with respect to cathode	90 max.	volts

→ **Typical Operation:**

Heptode Plate Voltage	100	250	volts
Heptode Grids-No.2 & No.4 Voltage	100	100	volts
Heptode Grid-No.1 Voltage	-3	-3	volts
Triode (Oscillator) Plate-Supply Volt.	100	250†	volts
Triode Grid & Heptode Grid-No.3 Resistor	50000	50000	ohms
Heptode Plate Resistance	0.5	1.5	megohms
Heptode Plate Current	1.5	1.4	ma
Heptode Grids-No.2 & No.4 Current	2.6	2.8	ma
Triode Plate Current	3.2	5	ma
Triode Grid & Heptode Grid-No.3 Current	0.3	0.4	ma
Conversion Conductance	280	290	μmhos
Conversion Conductance (Approx.) for heptode grid-No.1 bias of -20 volts	2	2	μmhos
Total Cathode Current	7.7	9.6	ma

† Applied through a 20000-ohm dropping resistor, properly bypassed.

NOTE: The transconductance of the triode section, not oscillating, is approximately 1400 μmhos under the following conditions: triode plate voltage = 150; triode-grid & heptode grid-No.3 volts = -3. Under the same conditions, triode plate current is 6.6 ma., triode plate resistance is 10700 ohms, and amplification factor is 15.

→ Indicates a change.

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